BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA

DOCKET NO. 2019-290-WS

In the Matter of:	**)**	
	)	**DIRECT TESTIMONY OF**
Application of Blue Granite Water	**)**	**BRYCE MENDENHALL FOR**
Company for Approval to Adjust	**)**	**BLUE GRANITE WATER COMPANY**
Rate Schedules and Increase Rates	**)**	
	)	

Q. PLEASE STATE YOUR NAME, PRESENT POSITION, AND BUSINESS ADDRESS.

A. My name is J. Bryce Mendenhall. I am Vice President of Operations for Blue Granite Water Company ("BGW" or "Company"), Carolina Water Service, Inc. of North Carolina in North Carolina, and Tennessee Water Service, Inc. in Tennessee, all of which are subsidiaries of Corix Regulated Utilities, Inc. ("CRU"). My business address is 4494 Parkway Plaza Boulevard, Suite 375, Charlotte, North Carolina 28217.

Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND?

A. I have been employed with BGW since March 2017. I graduated from Appalachian State University in 1993 with a degree in Geographic Information Systems and Cartography and have been employed in the water and wastewater profession for twenty-six years collectively. Prior to my employment with the Company, I worked for more than a decade as the Utilities Director for Franklin County, North Carolina.

Q. WHAT ARE YOUR DUTIES IN YOUR CURRENT POSITION WITH BGW?

A. As BGW's Vice President of Operations, I am responsible for making sure our customers in South Carolina receive the best possible service. Accordingly, I am responsible for operating personnel, facilities, maintenance, and capital projects. My duties include the supervision of BGW's consolidated operations to include the maintenance, repair and replacement of water and sewer lines and other water and wastewater facilities. I work with state regulatory agencies such as the Office of Regulatory Staff ("ORS") and federal regulatory agencies regarding operational and capital issues, as well as the South Carolina Department of Health and Environmental Control ("DHEC") regarding compliance

procedures and requirements. I also work with developers and builders regarding new and existing development and work to ensure that individual customer concerns regarding their water and sewer service are handled properly and are satisfactorily resolved. As needed, I communicate directly with individual customers and home owner associations to help resolve service-related issues.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to discuss certain elements of BGW's application filed in this docket and to discuss the Company's operations. Specifically, I will: (1) provide an overview of BGW's water and sewer systems and service areas; (2) explain the principal drivers of the present rate increase request, including major recent capital investment; (3) discuss BGW's decommissioning of certain plant assets; (4) explain the Midlands contract with ClearWater Solutions; (5) discuss the Company's proposal to amend its tariff language and fees related to Solids Interceptor tanks; and (6) share BGW's big picture efforts to address inflow and infiltration ("I&I"), water loss, treatment issues, and technological upgrades to benefit customers.

Q. PLEASE DESCRIBE BGW'S WATER AND WASTEWATER OPERATIONS IN SOUTH CAROLINA.

A. BGW is a wholly-owned subsidiary of CRU. BGW has approximately 28,300 customers in 16 counties: Lexington, Richland, Sumter, Aiken, Saluda, Orangeburg, Beaufort, Georgetown, Abbeville, Union, Anderson, York, Cherokee, Greenville, Greenwood, and Williamsburg. As a result of the merger with Southland Utilities, Inc., Utilities Services of South Carolina, Inc., and United Utility Companies, Inc. in 2015, the Company operates

105 water systems and 28 sewer systems in South Carolina. BGW has 105 drinking water permits, 18 NPDES permits and 10 satellite sewer system permits to support the operations of these systems.

Q. WHAT ARE THE MAIN DRIVERS OF THE REQUEST TO ADJUST RATES IN THIS PROCEEDING?

A. Since the conclusion of BGW's last base rate case in Docket No. 2017-292-WS, the Company has invested approximately $23 million in its water and sewer systems in order to continue to provide reliable and high-quality water and sewer services to its customers. These recent capital investments include, but are not limited to, the Shandon Interconnect project, the Stonegate Interconnect project, the Friarsgate Wastewater Interconnect project, the Lake Wylie Charlotte water system interconnection, and a series of wastewater collection system ("WWCS") improvement projects. I will describe each project, including the benefits achieved, issues resolved, and in-service dates.

Q. PLEASE DESCRIBE THE SHANDON INTERCONNECT PROJECT.

A. This project is associated with the interconnection between two existing BGW systems which are approximately one mile apart in Rock Hill: Shandon and Carrolton Place. The Shandon well water system, serving approximately 60 customers, was originally supplied by water produced from now-failing wells. The Company initially attempted to address water contamination issues at the third well, and drilled test wells nearby, but were unable to resolve the supply and quality concerns. After rehabilitation efforts failed, potable water was delivered daily or as needed by tanker truck to a Shandon hydro tank, then pumped into the distribution system to satisfy demand. The constant and ongoing delivery of water

via tanker truck, however, was only a short-term, stop-gap measure. To provide a more sustainable solution, interconnection of the two systems was necessary to satisfy demand generated by the Shandon customers. The project also included the abandonment of all three test wells and restoration of the leased property. The total cost of the project was $1,751,274, and was completed in May 2019.

Q. PLEASE DESCRIBE THE INVESTMENT MADE IN THE STONEGATE INTERCONNECT PROJECT.

A. This scope of this project was to convert the Stonegate well water system to a purchased water system by interconnecting with the City of Columbia and closing out the existing facilities. This conversion was necessary to address persistent instances of water quality issues, primarily iron and manganese concentrations. The City has a 12" water main that intersects with the Company's 6" water main near the entrance of the subdivision, which served as the location of the interconnection. The project was completed and placed into service in April 2019, at a total investment of approximately $156,263.

Q. WAS THERE A DECOMMISSIONING ASPECT OF THE STONEGATE INTERCONNECT PROJECT?

A. Yes. In conjunction with the interconnection project, three wells and a treatment facility at the Stonegate system were decommissioned. This was completed by November 2019, at an approximate cost of $38,645.

Q. ANOTHER PROJECT YOU MENTIONED WAS THE FRIARSGATE WASTEWATER INTERCONNECT PROJECT. WHAT WAS THE OBJECTIVE OF THAT PROJECT?

A. The objective of the Friarsgate WWTP Interconnection project was to divert wastewater from the Friarsgate WWTP to the City of Columbia's Metro WWTP for treatment and discharge. The primary purpose of the interconnection was to end discharges into the Saluda River, consistent with the DHEC Consent Order currently in place. This was accomplished by the construction of a wastewater lift station at the Friarsgate WWTP site in order to divert influent wastewater flow from the existing pump station to the lift station via an existing 20 inch gravity sewer. The project also included regrading and rehabilitation of the existing equalization basin for peak flow storage, as well as the diversion of effluent flow using an existing 10 inch effluent force main with connection to the lift station. Finally, the project required the connection of the existing effluent force main into the City of Columbia's 28 inch gravity sewer, which continued to the City of Columbia's WWTP.

Q. CAN YOU PROVIDE SOME BACKGROUND WITH RESPECT TO THIS INTERCONNECT PROJECT?

A. Yes. In November 2017, DHEC issued a Notice to the Company in accordance with the terms of the Friarsgate WWTP NPDES permit to interconnect the facility with one of the designated regional providers – Richland County or the City of Columbia. The Friarsgate WWTP NPDES permit contains a Section 208 Water Quality Management Plan requirement that the facility be interconnected when a connection with a regional provider is available. After receipt of the DHEC Notice, the Company executed an interconnection agreement with the City of Columbia in July 2018, which subsequently was approved by the South Carolina Public Service Commission in Order No. 2018-682, issued in October

2018. This project was undertaken to comply with the DHEC Notice and the Midlands Council of Governments Water Quality Management Plan. I would note that the Friarsgate Interconnect Project is related to the Friarsgate decommissioning project, which I discuss below.

Q. WHAT IS THE STATUS OF THE FRIARSGATE WWTP INTERCONNECT PROJECT?

A. The project began in February 2018, the physical interconnection was made on April 1, 2019, and the project was completed on December 20, 2019. The total cost of the interconnect project, inclusive of the interconnection itself, the new lift station, and rehabilitation of the existing equalization basin, was approximately $4,582,361.

Q. HAVE THE CAPITAL INVESTMENTS MADE WITH RESPECT TO THESE THREE INTERCONNECT PROJECTS HAD A POSITIVE IMPACT ON CUSTOMERS?

A. Yes. The interconnect projects have improved and will continue to improve service to customers in several ways. Investments of this type address well water quality and pressure concerns, especially for systems built in rural areas in which no municipal systems were located. For instance, the Shandon Interconnection with Carrolton Place near Rock Hill has resulted in improved capacity for residents of the Shandon subdivision. The water interconnection projects have also allowed a consistent supply of good quality potable water at sustained pressures, which was not possible with the previous well system. Thus, customer concerns regarding quality and quantity have been addressed. In addition, water interconnections make the system more reliable and increase safety by improving flushing

capabilities. While well pressure and volume of water can be adequate for the normal operation, they are often insufficient for a complete efficient flushing of the system. The water interconnections I discussed above will improve the flushing capabilities of the system while providing fire flow to the existing fire hydrants and serving as an emergency water supply when needed.

Q. YOU ALSO MENTIONED THE INVESTMENTS MADE WITH RESPECT TO THE LAKE WYLIE CHARLOTTE WATER SYSTEM CONNECTION. CAN YOU DESCRIBE THAT PROJECT AND ITS CUSTOMER BENEFITS?

A. Yes. The Lake Wylie/Riverhills community has seen steep development increase in recent years, which has created a need for increased water supply and storage capacity. The system, nearing its capacity for supply and storage, is currently bulk supplied by York County at one connection point. Following the performance of a full water system modeling analysis in November 2018 to evaluate the current and future needs of the system, the model analysis determined that an additional water system connection with the City of Charlotte was necessary to provide increased flow and to have a secondary source of water supply which also will support future elevated storage tank projects. This additional connection was also contemplated in the York County Franchise Agreement, referenced in the testimony of Witness DeStefano. The Company was also required to implement water use restrictions in May 2019 in order to ensure adequate water for drinking, sanitation, and fire protection services. The current phase of the project included meter, backflow, pressure sustaining valve, and pressure reducing valve installations, as well as over 900

lateral feet of piping. The interconnection with Charlotte was in service on October 1, 2019, with a total cost of approximately $927,600.

Q. EARLIER, YOU MENTIONED A SERIES OF WWCS IMPROVEMENT PROJECTS IN WHICH BGW HAS RECENTLY IMPLEMENTED. CAN YOU PLEASE DESCRIBE THOSE INVESTMENTS?

A. Yes. Since its last rate case, the Company has performed WWCS improvement projects in the following systems: Rollingwood, Pocalla, Oakland, Palmetto Estates, and Fairwood. The purpose of these collective projects was to conduct CCTV inspections and clean approximately 77,299 lateral feet of sanitary sewer gravity lines in these five systems. The improvements also included rehabilitation of the systems, including lining pipes with "cured in place piping," known by its acronym, "CIPP." CIPP and line replacements extend the useful life of the WWCS. The cost of these WWCS improvement projects, which included both engineering and construction aspects, totaled approximately $1,215,224. These system improvements were completed by December 15, 2019.

Q. WHY WERE THE WWCS IMPROVEMENT PROJECTS NECESSARY?

A. The WWCS for Pocalla, Fairwood, Oakland, Rollingwood and Palmetto Estates were constructed in 1966, 1972, 1973, 1975 and 1977, respectively, and much of the original clay gravity sewer lines remain in service. The systems have higher than normal flow levels during dry weather and elevated flows during rain events. The CCTV identified areas of the WWCS to be rehabilitated, which will allow for reduction of flows caused by I&I. I&I has been a Company focus with regard to purchased sewer expense, sewer rodding and

sludge hauling expenses. The cleaning allowed for the CCTV to be completed along with removing possible blockages.

Q. HAS THE COMPANY ALSO PERFORMED A WWCS IMPROVEMENT PROJECT IN THE FRIARSGATE SYSTEM?

A. Yes. In July 2017, the Company and DHEC entered into a Consent Order related to the discharge of untreated or partially treated water from the Friarsgate WWCS. The Consent Order required the Company to perform a Corrective Action Plan ("CAP") involving the performance of inspections, cleaning, and rehabilitation of the Friarsgate WWCS.

Q. PLEASE DESCRIBE THE SCOPE OF THE FRIARSGATE WWCS IMPROVEMENT PROJECT.

A. The Friarsgate WWCS Improvement Project included a cleaning and CCTV of approximately 22,000 lateral feet of sanitary sewer gravity lines. The project included CIPP and line replacement to extend the useful life of the WWCS. The Friarsgate WWCS Improvement project concluded on November 15, 2019, is currently in service, and had a total cost of approximately $829,122.

Q. HAVE THESE WWCS INVESTMENT PROJECTS HAD AN IMPACT ON CUSTOMERS?

A. Yes, the investments we have made in I&I have increased the safety and reliability of our system to the benefit of our customers. I&I occurs primarily in aged clay sewer mains as a result of cracks, separation, root intrusion, improper tapping of main by builders (hammer taps), aged or damaged manholes, unauthorized tapping of mains for storm water runoff of gutters, and ground and/or storm water flow into the sewer collection system. Where

necessary, broken sewer lines and damaged manholes are repaired and replaced. Increasingly, aging sewer lines, and particularly those constructed from clay pipe, may become seriously compromised. Digging up and replacing thousands of feet of old clay pipe may not always be the most cost-effective alternative. Often, the Company can address the issue more efficiently and expeditiously with the CIPP process. The Company has lined thousands of feet of pipe without having to dig through streets and landscaped yards to address I&I. The CIPP lining is more durable than the clay and is expected to have a useful life of approximately 50 years.

Q. WHEN YOU WERE DISCUSSING THE FRIARSGATE INTERCONNECT PROJECT, YOU STATED THAT IT WAS RELATED TO THE FRIARSGATE DECOMMISSIONING PROJECT. CAN YOU PLEASE DESCRIBE THE LATTER?

A. In conjunction with the interconnection of Friarsgate WWTP to the City of Columbia, the existing Friarsgate WWTP has been decommissioned. This included (1) the dewatering and disposal of sludge; (2) the bleaching of the digesters, clarifiers and oxidation ditch; (3) the punching of below-ground structures to permit water flow; (4) the disassembly of above- and below-ground structures; (5) the capping of below-ground piping; and (6) the removal and disposal of scrap material.

The execution of the decommissioning project was not without challenges. The decommissioning project was scheduled to be completed on December 20, 2019. On December 13, 2019, just prior to final decontamination, the Midlands area received a massive amount of rainfall—an amount that, according to news reports, set the record for

the most rainfall ever recorded for Columbia in the winter season.[1] Other news outlets reported that the record rainfall flooded some parts of Richland and Lexington counties,[2] and the Company's contractor did not anticipate—and could not have anticipated—the record rainfall. Unfortunately, the unexpected record rainfall resulted in two Sanitary Sewer Overflows (SSO), one at the site of the decommissioning and another at a flooded portion of the collection system. Due to the quick actions of our operators, however, we recovered from the SSOs quickly and were able to complete the decommissioning on schedule. The decommissioning was completed on December 20, 2019, and the total cost was approximately $1,109,469.

Q. CAN YOU DESCRIBE THE RECENTLY EXECUTED MIDLANDS CONTRACT WITH CLEARWATER SOLUTIONS?

A. In attempting to improve its operations in the Midlands in a tight labor market, the Company made the management decision to enter into a contract with ClearWater Solutions, LLC to provide the labor to manage, operate, and maintain the Company's water and wastewater treatment facilities in the Midlands area. As discussed in Witness Denton's testimony, the Company is in the middle of processes to improve operational performance.

[1] *See* WLTX, *Columbia Sets Single Day Record for Winter Rainfall*, https://www.wltx.com/article/weather/columbia-sets-winter-rain-record/101-b244f05a-b755-43b8-8fd2-83e1b366910e (Dec. 13, 2019) ("At 7 p.m. Friday, the National Weather Service in Columbia had received 4.16 inches of rain at their official reporting station. That set the record for not only the wettest December day on record in Columbia, but the wettest winter day on record in Columbia.").

[2] WISTV, *Heavy Rain Causes Flooding Issues, Closes Roads in Richland, Lexington Counties*, https://www.wistv.com/2019/12/13/heavy-rain-causes-flooding-issues-closes-roads-richland-lexington-counties (Dec. 13, 2019).

At this point, the Company's long-term plan is to replace ClearWater Solutions with in-house operators, and we continue to work towards that goal.

Q. PLEASE EXPLAIN BGW'S REQUEST TO AMEND ITS TARIFF LANGUAGE AND FEES RELATED TO SOLIDS INTERCEPTOR TANKS.

A. As part of the application filed in this proceeding, BGW is seeking approval from the Commission to amend its tariff language and fees related to Solids Interceptor Tanks. The Company proposes to change the pumping charge from $150 to the actual cost to access, pump, and service the tanks on a periodic basis.

Q. WHY IS THE COMPANY SEEKING TO MAKE THIS CHANGE?

A. This change is necessary to permit the Company to recover from the responsible customer the actual costs associated with the necessity of pumping and cleaning a customer's tank when excessive solids have accumulated in the interceptor tank. The actual cost of performing this task, inclusive the cost to access the tank, is often more than the currently-effective charge of $150 and needs to be performed every three to five years. The Company therefore proposes to bill the applicable customer for the actual cost of pumping and cleaning the tank, and that the pumping charge be included as a separate line item on the customer's next bill. The Company would also allow, should the customer so desire, to bill the customer's pumping charge in twelve equal monthly installments.

Q. PLEASE PROVIDE AN UPDATE ON SOME OF THE RECENT TECHNOLOGICAL UPGRADES THE COMPANY HAS MADE TO ITS SYSTEM.

A. One of the major initiatives the Company has undertaken is the installation of Advanced Metering Infrastructure (AMI) meters in the Lake Wylie/Riverhills water system. The

scope of the project consists of replacing all customer touch read meters with new ultrasonic AMI remote radio read meters. Prior to the project, the Lake Wylie/Riverhills water system had 4,715 total meters in place, with 4,057 of the meters being residential meters. The multi-phase project, which concluded mid-December 2019, included the replacement of meters and the construction of 15 antennas in various locations in the Lake Wylie system.

Q. WHAT ARE THE BENEFITS OF THE AMI PROJECT?

A. The Company strives to deliver service to our customers in an efficient manner while maintaining employee safety and customer satisfaction, and investment in AMI helps to meet these goals. Benefits of AMI technology to customers and the Company include: (1) customer satisfaction with data and billing accuracy; (2) improved customer service; (3) reduction in re-read/re-billing; (4) employee safety, especially during hazardous weather events; (5) replacement of inaccurate meters which can improve non-revenue water percentages; (6) better leak detection which helps the Company more promptly address water loss and reduce purchased water expense; and (7) customer interaction with respect to personal consumption habits and trends. Replacing all meters with AMI meters over a 6 year period throughout the Company's water systems will have a significant impact in accurately measuring customer usage and eliminate the need to use outside contractors for meter reading.

Q. IS THE COMPANY SEEKING RECOVERY OF THE COSTS OF THIS PROJECT IN THIS PROCEEDING?

A. Yes. The Company is seeking to include $1,919,179 in this proceeding. The AMI project was completed, and the AMI meters were in service, by mid-December 2019.

Q. PLEASE DESCRIBE THE COMPANY'S INVESTMENT IN ITS OPERATIONS MANAGEMENT SYSTEM.

A. The Company's Operations Management System ("OMS") initiative has been led through collaboration between management from CRU's Shared Services team and individual business unit operations teams. OMS is a corporate Geographic Information System ("GIS") and Computer Maintenance Management System, collectively referred to as the OMS within CRU. CRU and the Company have selected the OMS software from Lucity, Inc.

The OMS software allows integration of the following systems/programs into one interface: (1) GIS, (2) Customer Care and Billing, (3) Asset Registry, (4) Purchase Order and Timekeeping (currently housed in JD Edwards), (5) Health, Safety & Environmental Incident Reports, (6) Work Orders/Filed Archives, and (7) Preventative Maintenance. The OMS software will allow the end-user to view and record information in real-time using an interactive map supported by ESRI ArcGIS, a mapping and analytics platform. Some of the benefits recognized by the Company will be: (1) improved ability to access information and maintain information on assets, (2) improved customer service through real-time work orders and field activities, (3) improved line-of-sight on preventative maintenance, asset conditions, service levels and risk, and (4) better data to support decision-making through improved capital project identification, prioritization, and justification.

Q. PLEASE SUMMARIZE THE COMPANY'S EFFORTS TO ADDRESS NON-REVENUE WATER.

A. In June 2019, the Company articulated the measures staff will undertake to address Non-Revenue Water ("NRW"). The NRW strategy will be embedded within an ethic of continuous improvement and will be reviewed and – as necessary – updated annually by the President and Vice President of Operations of the Atlantic Business Unit. The strategy consists of five primary tasks:

Task 1: Review of existing Water Audits and Water Audit Relevant Data

Task 2: Validation of Water Balance Data and Recommendations for Bottom-Up Data Validation and Tests

Task 3: Preparation of AWWA Water Balance:

<table>
<tr><td rowspan="8">Water Supplied</td><td rowspan="4">Authorized Consumption</td><td rowspan="2">Billed Authorized Consumption</td><td>Billed Metered Consumption</td><td rowspan="2">Revenue Water</td></tr>
<tr><td>Billed Unmetered Consumption</td></tr>
<tr><td rowspan="2">Unbilled Authorized Consumption</td><td>Unbilled Metered Consumption</td><td rowspan="6">Non-Revenue Water</td></tr>
<tr><td>Unbilled Unmetered Consumption</td></tr>
<tr><td rowspan="4">Water Losses</td><td rowspan="3">Apparent Losses</td><td>Unauthorized Consumption</td></tr>
<tr><td>Customer Meter Inaccuracies</td></tr>
<tr><td>Data Handling Errors</td></tr>
<tr><td colspan="2">Real Losses</td></tr>
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Task 4: Recommendations for Water Loss Control and Infrastructure

Task 5: Field Leak Detection

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.